Instruction Manual

EK135

Serialnummer
Picture 1

1. Side a
2. First crimp
3. Side b
4. Crimping direction
5. First crimp
6. Crimping direction
7. First crimp
8. Crimping direction
9. First crimp
10. Crimping direction

Picture 2

Dimensions:
- 74 mm
- 60 mm
- 490 mm
- 51 mm
- 136 mm
- 314 mm
- 96 mm
Instruction Manual

for the electric-hydraulic crimping unit Type EK135,
Serial-No. ...........................

Table 1 (see Picture 1 page 2)

<table>
<thead>
<tr>
<th>Pos.-No.</th>
<th>Description</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Trigger</td>
<td>switch to start crimping procedure</td>
</tr>
<tr>
<td>2</td>
<td>Retract button</td>
<td>button to open the dies in case of emergency</td>
</tr>
<tr>
<td>3</td>
<td>Battery lock</td>
<td>device to secure the battery</td>
</tr>
<tr>
<td>4</td>
<td>Crimping head</td>
<td>C-shape crimping head for 135 kN</td>
</tr>
<tr>
<td>5</td>
<td>Housing</td>
<td>ergonomically formed plastic housing for perfect handling with a detachable lid</td>
</tr>
<tr>
<td>6</td>
<td>Light diode display</td>
<td>indicator for tool functions and battery charge control</td>
</tr>
<tr>
<td>7</td>
<td>Battery cartridge</td>
<td>rechargeable NiCd battery</td>
</tr>
<tr>
<td>8</td>
<td>die lock</td>
<td>Button to lock/release the Burndy Y46 dies</td>
</tr>
<tr>
<td>9</td>
<td>Removable hand guard</td>
<td>guard to protect the operating hand, not for transportation</td>
</tr>
<tr>
<td>10</td>
<td>Dies/Adapters</td>
<td>interchangeable crimping dies, respectively adapters</td>
</tr>
</tbody>
</table>

1. Introduction

Before starting to use the tool please read the instruction manual carefully.

Use this tool exclusively for its determined use.

Mounting and assembly of connecting material with the help of this tool must only be performed by specially trained personnel. The minimum age is 16 years.

This instruction manual has to be carried along during the entire life span of that tool.

The operator has
- to guarranty the availability of the instruction manual for the user and
- to make sure, that the user has read and understood the instruction manual.

2. Labels

On the labels fixed on the housing of the tool you’ll find the type specification name of the manufacturer and the company logo. On the opposite side of the housing you’ll find a label with a brief presentation of the scope of manageable cross-sections for copper and aluminium and the crimping force. The serial number is located on the hydraulic cylinder between the housing and the crimping head. On the crimping head you’ll find a warning against possible injuries during the crimp process.

3. Warranty

If correct operation is guaranteed our warranty is 6 months from the time of delivery unless otherwise specified by local guidelines and law.

4. Description of the electric-hydraulic crimping unit

4.1. Description of the components

The electric-hydraulic crimping unit type EK135 is a hand held tool and consists of the following components:

Symbol

- Safety warnings
  - Please do not disregard these instructions in order to avoid human injuries and environmental damages.
- Operational warnings
  - Please do not disregard them to avoid damaging the pump unit.

4.2. Brief description of the important features of the unit

- The hydraulic unit incorporates an automatic retraction which returns the piston into its starting position when the maximum operating pressure is reached.
- The unit is equipped with a special brake which stops the forward motion of the piston/dies when the trigger (Pos.-No. 1) is released.
- The unit is equipped with a double piston pump which is characterised by a rapid approach of the dies (Pos.-No. 10) towards the connector and a slow crimping motion.
- The crimping head can be smoothly turned by 360° around the longitudinal axis in order to gain better access to tight corners and other difficult working areas.
- The EK135 is equipped with a microprocessor which indicated service intervals, internal checks and low battery charges. It also shuts off the motor automatically after the crimp is completed.

4.3. Description of the light diode display

This tool is equipped with a special circuit board incorporating several important features to inform the user about the current status of the unit. The diode (Pos.-No. 6) signals in the following cases:

<table>
<thead>
<tr>
<th>Signal</th>
<th>Duration</th>
<th>When it occurs</th>
<th>What it means</th>
</tr>
</thead>
<tbody>
<tr>
<td>✤ ✤ ✤</td>
<td>a few seconds of</td>
<td>battery insertion</td>
<td>self check – O.K.</td>
</tr>
<tr>
<td></td>
<td>flashing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>✤ ✤ ✤ ✤ ✤</td>
<td>glowing for 20 seconds</td>
<td>after crimp</td>
<td>battery discharged</td>
</tr>
<tr>
<td>✤ ✤ ✤</td>
<td>flashing for</td>
<td>after crimp</td>
<td>return for service</td>
</tr>
<tr>
<td></td>
<td>20 seconds (2Hz)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>✤ ✤ ✤ ✤ ✤ ✤ ✤ ✤</td>
<td>flashing for</td>
<td>During high temperature</td>
<td>unit too hot</td>
</tr>
<tr>
<td></td>
<td>20 seconds (5Hz)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>✤ ✤ ✤ ✤ ✤ ✤ ✤</td>
<td>20 sec. glowing</td>
<td>after crimp</td>
<td>service required</td>
</tr>
<tr>
<td></td>
<td>and flashing</td>
<td></td>
<td>and battery flat</td>
</tr>
<tr>
<td></td>
<td>intermittently</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remark:

- Does the diode signal periodically at the end of a working cycle for approx. 20 sec the unit must be returned to an authorised Service Center for Service as soon as possible.
- In case of an error the light diode display also signals periodically at the end of a working cycle. The signal indicates in this case the circuit opening by the electronic fuse. A possible reason for that is that a cycle was performed with an incorrectly low battery. If the signal occurs even after changing the battery there must be a different error or a service is due. In these cases the tool must be returned to the manufacturer or an authorised service center.

1 The unit switches off when it gets too hot. It switches on automatically after the unit cooled off.
5. Remarks in respect of the determined use

Before starting any work on electrical appliances it must be safeguarded that all applicable national laws and safety standards to protect the user against electrical shock are fully complied.

Attention
This is not an insulated tool and does therefore not protect the user against electrical shock.

Prior to operating the unit the charging level of the battery (Pos.- No. 7) should have been tested. A low charging level can be detected by the flashing of the LED (Pos.-No. 6) for 20 s at the end of a crimping cycle.

5.1. Operation of the unit

First you have to select the right dies/adapters (Pos.-No. 10) for the intended application.

Attention
Don’t operate the tool without dies/adapters.

The crimping head accepts various adapters for well known dies worldwide e.g. for Burndy U-dies. The adapters will be mounted axially on the crimping head.

The Burndy U dies e.g. will be inserted laterally into the crimping head respectively adapter until the die lock engages and locks the die securely.

The crimping head should be turned into the desired position before starting the crimping cycle. It is significantly easier to turn the crimping head in a pressure free state.

The crimping procedure is initiated by actuating the trigger (Pos.- No. 1 & Picture 2 Pos. A). The crimping process is defined by the closing motion of the dies. During that process the connecting material is positioned in the stationary half of the die whereas the moving part of the die is approaching the compression point.

The crimping process is terminated when the crimping force is reached. After having completed the crimp the dies return into the starting position automatically.

Afterwards a second crimping cycle can be initiated or the crimping procedure can be terminated. To remove the dies actuate the die lock and slide the dies laterally out of the crimping head.

Attention
After having terminated the crimping process and prior to changing the dies remove battery to avoid unintended use.

In case of error or emergency the dies can be returned into the starting position by actuating the retract button (Pos.-No. 2 & Picture 2 Pos. C).

Attention
The crimping process can be interrupted at any moment by releasing the trigger.

5.2. Explanation of the application range

The EK135 has a large number of various dies and adapters (Pos.- No. 10) available to crimp different series of connectors such as:

- die adapters for Burndy P-dies (Y46) and ILSCO ILD-P
- die adapters for T&B 15600 dies and Blackburn 15600 dies
- die adapters for Klauke U-dies, Burndy U-dies, ILSCO ILD dies, T&B 15500 dies and Blackburn 15500 dies.
- die adapters for Kearney PH2/WH2 dies

<table>
<thead>
<tr>
<th>Crimping range</th>
<th>Crimping dies</th>
<th>Marking outside</th>
<th>Surface of the dies</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-300</td>
<td>TCL and C. Standard Version</td>
<td>,QS*</td>
<td>chrome plated (yellow)</td>
</tr>
<tr>
<td>16-240</td>
<td>TCL and C. DIN 46235 DIN 46267</td>
<td>,QS*</td>
<td>code # chrome plated</td>
</tr>
<tr>
<td>10-240</td>
<td>Aluminium CL and C.</td>
<td>,QS*</td>
<td>code # blue zinc</td>
</tr>
<tr>
<td>25-185</td>
<td>Aluminium C. Aldrey</td>
<td>,QS*</td>
<td>code # blue zinc</td>
</tr>
<tr>
<td>25/4-120/20</td>
<td>Full tension C. DIN 48085 T3</td>
<td>,QS*</td>
<td>code # blue zinc</td>
</tr>
<tr>
<td>10-240</td>
<td>Pre-rounding dies 35-300 se</td>
<td>RU, QS; sm</td>
<td>- chrome plated</td>
</tr>
<tr>
<td>16-150</td>
<td>Terminals DIN 46234 DIN 46230</td>
<td>,QS*</td>
<td>chrome plated</td>
</tr>
<tr>
<td>10-95</td>
<td>insulated terminals ISQ, QS</td>
<td>,QS*</td>
<td>chrome plated,</td>
</tr>
<tr>
<td>16-150</td>
<td>tub. CL for fine-str. conductors F, QS</td>
<td>,QS*</td>
<td>chrome plated</td>
</tr>
<tr>
<td>4-50</td>
<td>C-clamps C, QS</td>
<td>-</td>
<td>chrome plated</td>
</tr>
<tr>
<td>10-150</td>
<td>pre-insulated tub. CL and connectors IS, QS</td>
<td>,QS*</td>
<td>chrome plated</td>
</tr>
<tr>
<td>2x50-2x95</td>
<td>double compression CL DP, QS</td>
<td>,QS*</td>
<td>chrome plated</td>
</tr>
<tr>
<td>10-95</td>
<td>Oval compression joints CU or AL, QS</td>
<td>code # chrome plated</td>
<td></td>
</tr>
<tr>
<td>10-185</td>
<td>WF DIN 46228 AE, QS</td>
<td>-</td>
<td>chrome plated</td>
</tr>
</tbody>
</table>

**Abbreviations:** TCL= Tubular cable lugs, C= Connectors, WF= Wire Ferrules, QS= Cross-section

Attention
Do only crimp those connecting materials mentioned in Tab. 2.

If different conducting materials have to be crimped, please contact the manufacturer.

The EK135 is a hand held tool and it is not supposed to be restrained in a vise. It is not allowed to use the tool in a stationary application.

The tool is not designed for continued crimping operations. After a sequence of approximately 30-40 completed crimps you have to make a break of 15 min. to give the tool time to cool down.

Attention
Too intensive use can cause heat damages for the tool.

Attention
During the operation of electric engines sparks can occur which might ignite highly inflammable or explosive liquids and materials

Attention
Electric-hydraulic crimping tools should not be operated in pouring rain or under water.

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2 See Chapter 5.5 for more information of the battery and charging unit
3 See picture 4 page 2
5.3. Mounting instructions

Please read the assembly instructions in Chapter 12 of our general catalogue.

Attention
Even if the code number is identical only those dies should be used which are suitable for the material.

Please use the following assembly instructions for cable lugs and connectors:
1. Strip the conductor according to insertion depth (+10% due to the change of length of the cramped sleeve)
2. The conductor ends must be cleaned with a cloth or brush before the assembly.
3. Insert the conductor fully into the cable lug or connector.
4. Pay attention to the crimping directions and use the appropriate dies. The crimping directions’ for cable lugs and connectors is indicated in the illustration below.
5. After crimping, wipe away excess compound forced out of Al-cable lugs and connectors.

5.4 Service and maintenance instruction

The electric-hydraulic crimping unit is equipped with a sophisticated electronics enabling the user to see when the next service is due. (Pls. read chapter 4.3 for more information) When the next service is due the unit must to be returned to an authorised service center.

For every day service the unit has to be cleaned and dried after each use. The battery cartridge (Pos.-No. 7) and the charging unit have to be protected against humidity and dust.

Within the determined use of the tool only the dies/adapters (Pos.-No. 10) are permitted to be changed by the customers.

Attention
Do not damage the seals of the tool.

If the seals are damaged the warranty is invalidated.

5.5 Remarks on the use of the battery cartridge and charging unit

The charging unit is run with a nominal voltage of 230 V and a frequency of 50-60 Hz. New batteries must be charged prior to use. To charge the battery cartridge (Pos.-No. 7) the power plug of the charging unit has to be plugged into the power supply and the battery cartridge has to be pushed into the charging unit. The charging time is one hour. The charging level of the battery cartridge can be checked by a LED5.

red Battery cartridge is empty and is just being charged
red and green Battery cartridge is charged
green battery cartridge is charged
Is the battery plugged in correctly the LED changes from green to red and the charging procedure starts. When the charging procedure is terminated the LED changes again to green. Simultaneously a signal occurs for 5 seconds.

No other battery cartridges e.g. dry batteries or car batteries etc. are permitted to be used neither in the tool nor in the charging unit.

As soon as the speed of the machine decreases noticeably the battery must be recharged. Do not recharge a partially empty battery as a precaution.

If charging a battery which has currently been used or which was laying in the sun for a longer period of time the LED might flash red. In this case wait for a while. The charging procedure starts after the battery cooled down.

Does the LED flash red and green and does an audible tone occur for 20 seconds it is not possible to charge that battery. The poles of the battery or the charging unit are dirty or the battery is low or damaged. If you want to charge two batteries in a row wait for 15 min before you charge the second battery.

Avoid great fluctuating temperatures under 0°C and above 40°C. Through these fluctuations damages may result for the battery as well as for the charging unit. The best operation temperature is between 15-25 °C.

Do not leave or operate the charging unit in rain or snow. Do not charge the battery near lightly inflammable materials or gases.

Do not use the cord to transport the charging unit or to pull the plug out of a wall socket with force. Do not insert strange parts into the ducts of the charging unit.

The charging of the batteries must only be done with charging units supplied by the manufacturer.

Attention
Do not place the battery in your pocket or in your toolbox if there are any conductive materials in it such as coins, keys, tools or other metallic parts.

Pull the plug of the charging unit after charging. Do not disassemble the charging unit or battery.

In order to safeguard a safe and proper performance of the charging unit the repair and service of the unit should be made through our Service Center.

5.6 Storage and transport of the crimping tool

In order to protect the tool against damages it has to be cleaned carefully after each use and be put into the transportation case which has to be closed safely.

6. Troubleshooting

a.) Flashing of the light diode display (Pos.-No. 6)
=> See chapter 4.3 for more information about the special functions of the tool.
b.) The tool loses oil.
=> Return the tool to the manufacturer. Do not open the tool and damage the seals of the tool.
c.) The crimping tool does not reach the final operating pressure.
=> Stop the crimping process. Press the retract button (Pos.-No. 2) and the operating switch continuously and simultaneously for about 10 sec. Is the malfunction not be eliminated by this attempt the tool has to be returned to the manufacturer.

7. Putting out of operation/waste disposal

The disposal of the various components of the tool has to be treated separately. First you have to dispose of the oil at special delivery points.

Attention
Hydraulic oils represent a danger for the groundwater. Uncontrolled draining of or improper disposal is under penalty.
(environmental liability law)

Next, the battery cartridge (Pos.-No. 7) has to be specially disposed of according to the EEC Battery Guideline.

For the disposal of the remaining parts please reference the EC environmental guideline.

Because of possible environmental damages we recommend to dispose of the tool by professional companies.

Attention
Do not dispose of the unit in your residential waste because it will finally end up on the waste dump which would be hazardous for the environment.

A return of the old tool free of charge to the manufacturer cannot be granted.

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5 See Picture 4 on Page 2
6 The charging level of the battery can also be verified by the LED of the tool at the end of a crimping cycle. See chapter 4.3 for further information.
## Technical Data

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight of the complete tool</td>
<td>approx. 9.4 kg (incl. battery &amp; adapters)</td>
</tr>
<tr>
<td>Crimping force</td>
<td>approx. 135 kN</td>
</tr>
<tr>
<td>Hub</td>
<td>65 mm</td>
</tr>
<tr>
<td>Driving motor</td>
<td>direct-current permanent field motor</td>
</tr>
<tr>
<td>Battery voltage</td>
<td>12 V</td>
</tr>
<tr>
<td>Battery capacity</td>
<td>2 Ah</td>
</tr>
<tr>
<td>Charging time</td>
<td>approx. 1 h, ¼ h with Quickcharger</td>
</tr>
<tr>
<td>Crimping time</td>
<td>approx. 12 s to 16 s (depending on the connector size)</td>
</tr>
<tr>
<td>Crimp per battery</td>
<td>approx. 30 crimps (Cu 150 mm² DIN 46235)</td>
</tr>
<tr>
<td>Hydraulic oil</td>
<td>approx. 200 ml &quot;Shell Tellus T 15&quot;</td>
</tr>
<tr>
<td>Environmental temperature</td>
<td>-20°C to -40°C</td>
</tr>
<tr>
<td>Sound level</td>
<td>75 dB (A) in 1m distance</td>
</tr>
<tr>
<td>Vibrations</td>
<td>&lt; 2.5 m/s²</td>
</tr>
<tr>
<td>Dimensions</td>
<td>See Picture 2</td>
</tr>
</tbody>
</table>

Additional instruction manuals are available free of charge. The part # is HE.10236.
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**DÄNEMARK**

**BELGIEN**

**AUSTRALIEN**
Handgeführtes Elektrowerkzeug Typ EK135

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(PL) CE '04 - Zgodność z dyrektywami CE. Swiadomie odpowiedzialności osiadamy, że niniejszy produkt jest zgodny z następującymi normami lub dokumentacją normatywną:
DIN EN 292 Teil 1 und 2, EN 294, EN 349, EN 60204-1, EN 28662-1, EN 50081-1, EN 55014-2, EN 60529, EN 50144-1
zgodnie z postanowieniami wytycznych 89/37/EWG, 89/336/EWG

(R) CE '04 - ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ Με αναλήψη συνολικής δηλώσεως. Ωστόσο, το παρόν πρόσωπο συμφωνεί με τα παρακάτω πουτστά και με τα προτύπα που αναφέρονται στα σχετικά εγγράφα:
DIN EN 292 Teil 1 und 2, EN 294, EN 349, EN 60204-1, EN 28662-1, EN 50081-1, EN 55014-2, EN 60529, EN 50144-1
συμφωνούν με τοπ τον νομονισμό τους 89/37/ΕΕ/ΕΕ, 89/336/ΕΕ/ΕΕ

(S) CE '04 - Megfelelőség nyilatkozat. Kéziműködtetésű elektromos kéziszerszámok:
Teljes felelősség jelenlétében, hogy ezek a termékek a következő szabványokkal és irányelvekkel összhangban vannak:
DIN EN 292 Teil 1 und 2, EN 294, EN 349, EN 60204-1, EN 28662-1, EN 50081-1, EN 55014-2, EN 60529, EN 50144-1
és megfelelnek a rendeltetés szerinti 89/37/EEC, 89/336/EEC

(T) CE '04 – Prohlášení o shode. Prohlášujeme na vlastní zodpovědnost, ze tyto produkty splňují následující normy nebo normativní listiny:
DIN EN 292 Teil 1 und 2, EN 294, EN 349, EN 60204-1, EN 28662-1, EN 50081-1, EN 55014-2, EN 60529, EN 50144-1
Ve shode se smírniciemi 89/37/EEC, 89/336/EEC

Remscheid, den 05.11.2004

Dipl.-Ing. Joh.-Christoph Schütz, CE-Beauftragter